

ST. CROIX COUNTY GOVERNMENT CENTER  
ELECTRICAL UPGRADE

HUDSON, WISCONSIN

ELECTRICAL DESIGN  
NOVEMBER, 2015

ELECTRICAL ABBREVIATIONS		ELECTRICAL SYMBOL SCHEDULE		GENERAL ELECTRICAL PLAN NOTES		GENERAL POWER NOTES		LOCATION	
A or AMP	AMPERE	SYMBOL	DESCRIPTION	MTG. HEIGHT	A. INSTALL ELECTRICAL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, STATE, COUNTY, MUNICIPAL AND FEDERAL LAWS OR ORDINANCES GOVERNING THE PROJECT. IF THE PLANS AND SPECIFICATIONS ARE IN DIRECT CONFLICT WITH SUCH CODES, LAWS OR ORDINANCES NOTIFY THE ENGINEER OF CONFLICTS IN WRITING PRIOR TO MAKING CHANGES FROM PLANS AND/OR SPECIFICATIONS. WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED MASTER ELECTRICIAN. B. BRANCH CIRCUIT CONDUITS, JUNCTION BOXES AND CONNECTIONS ARE NOT SHOWN. PROVIDE COMPLETE RACEWAY SYSTEM AND CONDUCTORS AS REQUIRED FOR THE INDICATED CIRCUITRY. C. HOMERUN CIRCUITS TO BE 2012, 14120, 141 C TO 20A1P CIRCUIT BREAKER IN DESIGNATED PANEL, UNLESS NOTED OTHERWISE. THE NUMBERS SHOWN AT EACH DEVICE/HOMERUN REPRESENT BRANCH CIRCUIT NUMBER IN PANELBOARD. D. WIRE AND RACEWAY SIZES INDICATED ON HOMERUNS/CIRCUITS SHALL BE CONTINUOUS FOR ENTIRE LENGTH, UNLESS NOTED OTHERWISE. E. A MAXIMUM OF THREE CIRCUITS SHALL BE INSTALLED IN A CONDUIT. F. PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT. MULTIWIRE BRANCH CIRCUITS ARE NOT PERMITTED. EACH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR. NEUTRAL CONDUCTORS SHALL NOT BE SHARED. G. INSTALL WIRING (CONDUITS, ETC) CONCEALED. SURFACE WIRING SHALL ONLY BE INSTALLED ON CONCRETE BLOCK WALLS, UNLESS NOTED OTHERWISE. H. WIRING ABOVE CEILING THAT IS NOT IN CONDUIT AND LOCATED IN AN AIR HANDLING PLENUM SHALL BE PLENUM RATED. REFER TO MECHANICAL PLANS FOR PLENUM AREAS. I. DO NOT INSTALL ELECTRICAL EQUIPMENT THAT PHYSICALLY INTERFERES WITH SERVICING OF MECHANICAL EQUIPMENT. J. ELECTRICAL CONDUITS, WIRING, BOXES, ETC. SHALL NOT PENETRATE STAIR ENCLOSURE UNLESS THEY ARE FEEDING DEVICES LOCATED WITHIN THE STAIR ENCLOSURE. K. PROVIDE ELECTRICAL OUTLET PLATE GASKET SEALS AT RECEPTACLES, SWITCHES, OTHER ELECTRICAL BOXES ON EXTERIOR WALLS AND INTERIOR WALLS BETWEEN CONDITIONED AND UN-CONDITIONED SPACES. L. PROVIDE UNIVERSAL BLANK PLUGS ON SPARE CONDUITS EQUAL TO CARLON MAEP5 SERIES. M. SEAL CONDUITS AT THE LAST STRUCTURE PRIOR TO CONDUITS ENTERING A BUILDING AND WHERE CONDUITS ENTER A BUILDING WITH CARLON MAT OR MA2 SERIES OR EQUIVALENT DUCT PLUG FOR CONDUITS WITH WIRES AND CONDUITS AND CARLON MAE5 SERIES OR EQUIVALENT FOR SPARE CONDUITS. INSTALL NYLON PULL STRING AND FOOTAGE TAPE IN SPARE CONDUITS. N. RACEWAY AND WIRING INDICATED ON THE DRAWINGS ARE RECOMMENDATIONS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR ROUTING. O. ALTHOUGH FEEDER AND BRANCH CIRCUIT WIRE AND CONDUITS ARE NOT SPECIFICALLY SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE FEEDER AND BRANCH CIRCUIT WIRING SYSTEM IS INSTALLED. P. INDIVIDUAL OR GENERAL PURPOSE BRANCH CIRCUIT 120 VOLT; CIRCUITS OVER 100' 0" IN CONDUCTOR LENGTH SHALL BE INCREASED ONE WIRE SIZE AND CIRCUITS OVER 1700' 0" IN CONDUCTOR LENGTH SHALL BE INCREASED TWO WIRE SIZES UNLESS NOTED OTHERWISE. Q. INDIVIDUAL OR GENERAL PURPOSE BRANCH CIRCUIT 277 VOLT; CIRCUITS OVER 200' 0" IN CONDUCTOR LENGTH SHALL BE INCREASED ONE WIRE SIZE AND CIRCUITS OVER 300' 0" IN CONDUCTOR LENGTH SHALL BE INCREASED TWO WIRE SIZES UNLESS NOTED OTHERWISE.	A. COORDINATE LOCATION OF ELECTRICAL DEVICES SUCH AS RECEPTACLES, SWITCHES, FIRE ALARM DEVICES, ETC. WITH ARCHITECTURAL PLANS, ELEVATION AND DETAILS PRIOR TO START OF WORK. REQUEST CLARIFICATIONS FROM ARCHITECT PRIOR TO INSTALLATION. B. RECEPTACLES WITHIN 6'-0" OF WATER SOURCE SHALL BE A GFI RECEPTACLE. C. DO NOT INSTALL OUTLETS BACK TO BACK. PROVIDE MINIMUM 24 INCH HORIZONTAL SPACING IN FIRE RATED WALLS. MOUNT LOW VOLTAGE AND POWER OUTLETS IN DIFFERENT STUD WALL CAVITIES. D. WHEN THE COMBINING OF CIRCUITS OR HOMERUNS IS PERMITTED ELSEWHERE IN THE DOCUMENTS, RACEWAYS SHALL BE LIMITED TO SIX CURRENT CARRYING CONDUCTORS (THREE PHASE AND THREE NEUTRALS) AND GROUNDING CONDUCTOR UNLESS NOTED OTHERWISE. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH SINGLE PHASE CIRCUIT UNLESS AN OVERSIZE NEUTRAL IS SPECIFICALLY INDICATED. CONDUCTORS MUST BE DERATED PER THE NATIONAL ELECTRICAL CODE WHEN MORE THAN THREE CURRENT CARRYING CONDUCTORS ARE RUN IN THE SAME RACEWAY. E. PROVIDE NYLON PULL STRING IN EMPTY CONDUIT SYSTEMS FOR USE IN INSTALLING SYSTEM WIRING. F. COORDINATE LOCATION OF JUNCTION BOX FOR EQUIPMENT WHICH IS FURNISHED BY OWNER OR OTHERS WITH THE EQUIPMENT SUPPLIER PRIOR TO CONSTRUCTION. PROVIDE WIRING FROM JUNCTION BOX TO EQUIPMENT CONNECTION AS REQUIRED. G. WIRING INDICATED BY CIRCUIT NUMBER SYMBOL SHALL INCLUDE A NEUTRAL WHEN THE LOAD SERVED HAS PROVISIONS FOR, OR REQUIRES A NEUTRAL. TYPICALLY FEEDERS AND BRANCH CIRCUITS WILL REQUIRE A NEUTRAL, EXCEPT MOST MOTOR CIRCUITS. H. ARC-FAULT CIRCUIT PROTECTION SHALL BE INSTALLED PER NEC REQUIREMENTS.			
AB	ABOVE BACKSLASH								
AC	ABOVE COUNTER								
AF	ABOVE FINISHED FLOOR								
ATS	AUTOMATIC TRANSFER SWITCH								
C	CONDUIT								
CCTV	CLOSED CIRCUIT CAMERA/TV								
CU	COPPER								
DS	DISCONNECT								
EC	ELECTRICAL CONTRACTOR EXISTING								
EMERG	EMERGENCY EXISTING								
FA	FIRE ALARM								
FLA	FULL LOAD AMP								
GC	GENERAL CONTRACTOR								
GFI	GROUND FAULT INTERRUPTER								
GRD or G	GROUND								
HP	HORSEPOWER								
J-BOX	JUNCTION BOX								
KV	KILOVOLT								
KVA	KILOVOLT-AMPERE								
KW	KILOWATT								
LTG	LIGHTING								
MCS	MOLDED CASE SWITCH								
MECH	MECHANICAL								
MTR	MANUAL TRANSFER SWITCH								
MTS	MOTOR								
NEC	NATIONAL ELECTRICAL CODE								
NL	NIGHT LIGHT								
PNL	PANEL								
RCPT	RECEPTACLE								
RM	ROOM								
TEL	TELEPHONE								
TYP	TYPICAL								
UNO	UNLESS NOTED OTHERWISE								
V	VOLT								
W	WATT								
WP	WEATHERPROOF								
W	WITH								
W/O	WITHOUT								
XFMR	TRANSFORMER								





**GENERAL NOTES:**

A. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL POWER OUTAGES WITH OWNER.

B. CONTRACTOR SHALL COORDINATE ALL WORK TO KEEP POWER OUTAGES TO THE SHORTEST TIME POSSIBLE.

**KEYED NOTES:**

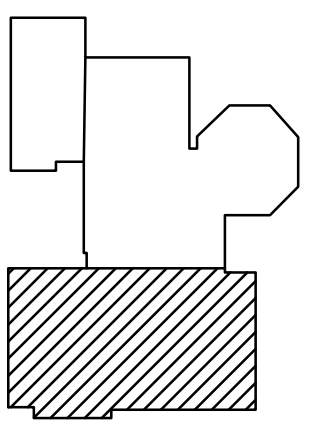
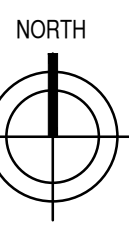
① DISCONNECT, REMOVE AND RELOCATE EXISTING ELECTRICAL EQUIPMENT. REFER TO 1/E-200.1A FOR NEW LOCATION.

② DISCONNECT AND REMOVE PANELBOARD. CIRCUITS TO BE EXTENDED FOR NEW INSTALLATION. REFER TO 1/E-200.1A FOR NEW LOCATION.

**GROUND FLOOR - DEMOLITION PLAN**

1 E-100 1/8"=1'-0" OMF NO. ISSUE NO.

0 4' 8' 16'



**KEYPLAN**  
SHADED SECTIONS INDICATE AREAS OF WORK UNDER THIS CONTRACT.



**CONFIDENTIAL**

No.	Date:	By	Revision
0	04/08/2016	MES	BID SET

No.	Date:	By	Revision

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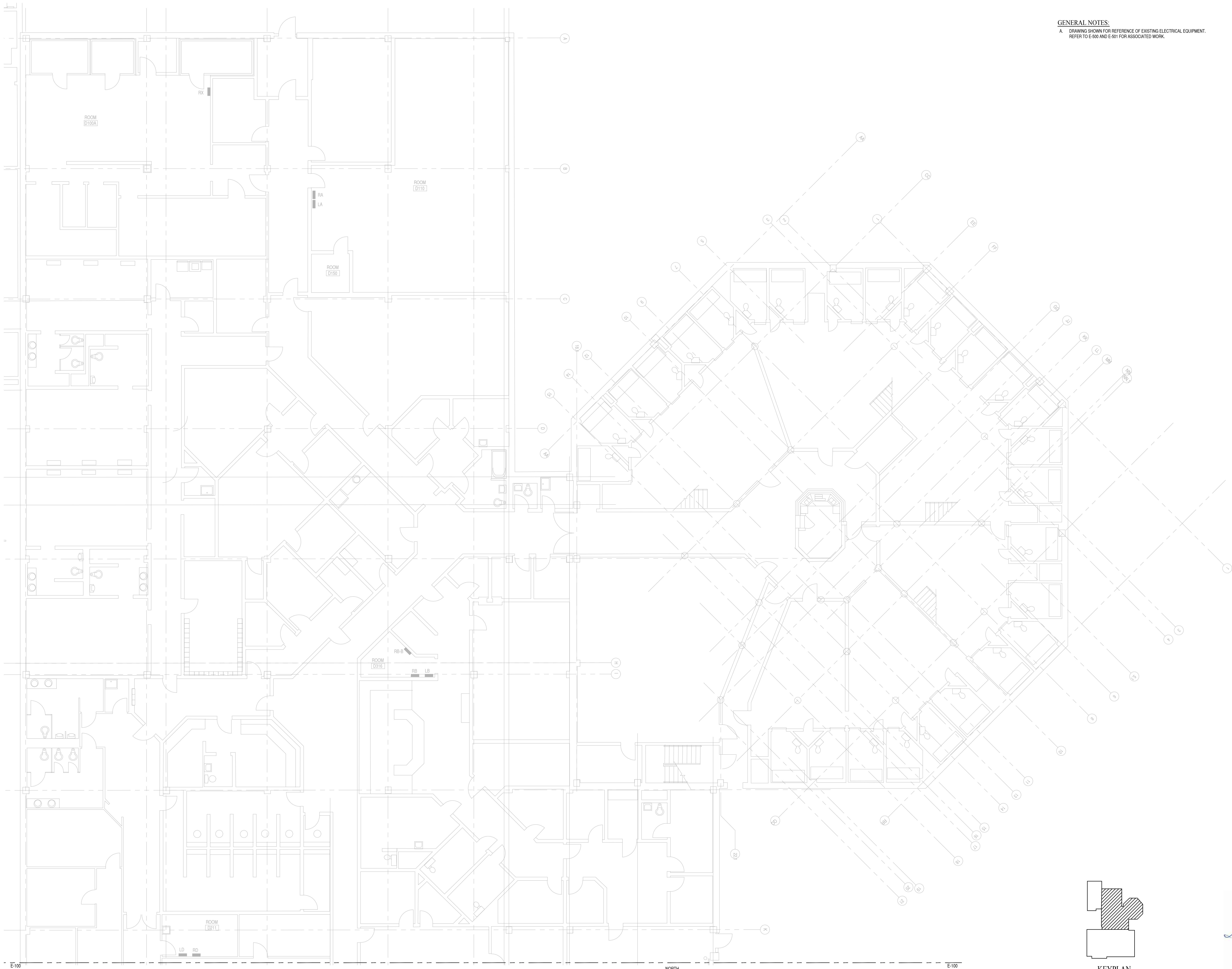
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ST. CROIX, WI

Sheet Title: GROUND FLOOR - DEMOLITION PLAN

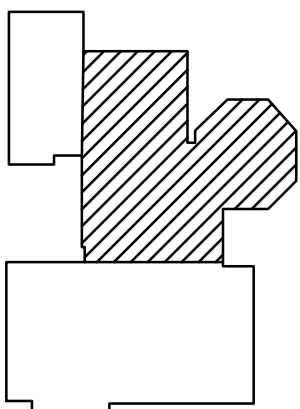
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Drawn By: MES  
Checked By: 15-282-00  
Project No.: AS NOTED  
DWG. Scale: 30x42

Revision Number: 0  
Sheet Number: E-100

GENERAL NOTES:  
A. DRAWING SHOWN FOR REFERENCE OF EXISTING ELECTRICAL EQUIPMENT.  
REFER TO E-500 AND E-501 FOR ASSOCIATED WORK.



GROUND FLOOR DETENTION - EXISTING POWER PLAN  
E-200.2 1/8"=1'-0"  
0 4 8 16'  
NORTH



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0	04/08/2016	MES	BID SET				

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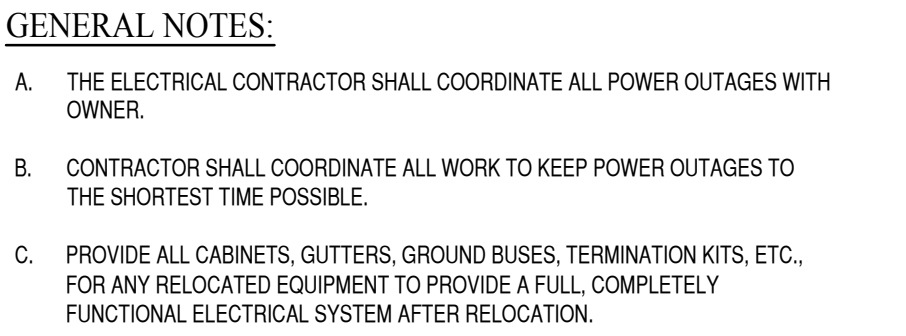
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**ST. CROIX COUNTY  
GOVERNMENT CENTER  
ELECTRICAL UPGRADE**  
ST. CROIX, WI

Sheet Title:  
**GROUND FLOOR DETENTION -  
EXISTING POWER PLAN**

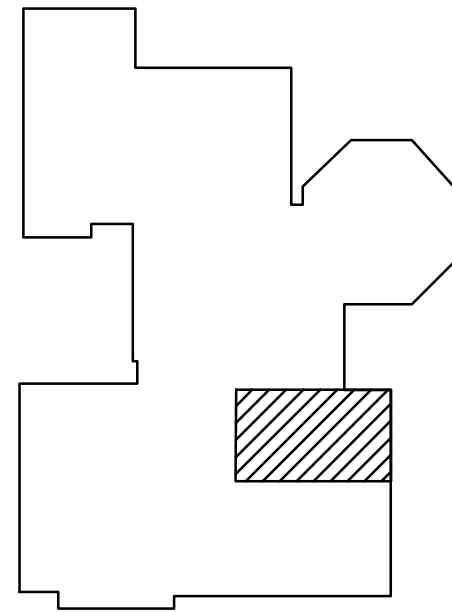
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Drawn By:	MES
Checked By:	15-282.00
Project No.:	AS NOTED
DWG. Scale:	30x42
Sheet Size:	

Revision Number:	0
Sheet Number:	E-200.2





- KEY NOTES:**
- 1) PROVIDE A FOUR POLE DOUBLE THROW SWITCH FOR MANUAL TRANSFER.
  - 2) PROVIDE A WALL MOUNTED GROUNDING BAR. FOR ADDITIONAL INFORMATION SEE NEW SINGLE LINE 1E-501.
  - 3) PROVIDE TWO TRANSFORMERS STACKED. MOUNT THE 75KVA TRANSFORMER ABOVE THE 300KVA TRANSFORMER.
  - 4) PROVIDE TWO TRANSFORMERS STACKED. MOUNT THE 75KVA TRANSFORMER ABOVE THE 112.5KVA TRANSFORMER.
  - 5) LOCATION OF NEW 480V SWITCHBOARD. CONNECT TO EXISTING CIRCUIT.
  - 6) LOCATION OF RELOCATED EQUIPMENT.
  - 7) PROVIDE INTERCONNECTION FROM UPS TO FACILITY NETWORK. VERIFY NETWORK REQUIREMENTS WITH OWNER PRIOR TO PROVIDING UPS SYSTEM.
  - 8) PROVIDE WEATHERPROOF GENERATOR CONNECTION.
  - 9) PROVIDE NEW 4" STRIP LIGHTS MATCH THE EXISTING LIGHTS IN AREA. LIGHTS SHALL BE CONTROLLED FROM MANUAL SWITCH NEXT TO NEW DOOR.



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Project Title:

ST. CROIX COUNTY  
GOVERNMENT CENTER  
ELECTRICAL UPGRADE  
ST. CROIX, WI

Sheet Title:

## NEW ELECTRICAL ROOM LAYOUT

Date: 03-15-16

Drawn By: \_\_\_\_\_  
Checked By: MES

Project No.: 15-28

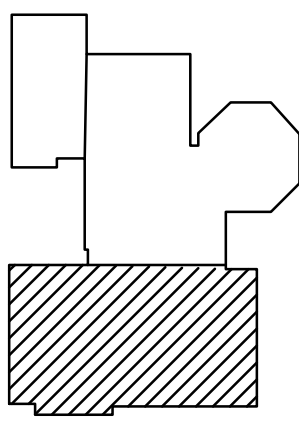
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Revision Number

Sheet Number:  
E-200.1A



GENERAL NOTES:  
A- DRAWING SHOWN FOR REFERENCE OF EXISTING ELECTRICAL EQUIPMENT.  
REFER TO E-500 AND E-501 FOR ASSOCIATED WORK.



KEYPLAN  
SHADED SECTIONS INDICATE  
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1  
E-201.1  
FIRST FLOOR - EXISTING POWER PLAN  
1/8"=1'-0"  
0 4' 8' 16'  
NORTH

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No.	Date:	By	Revision
0	04/08/2016	MES	BID SET

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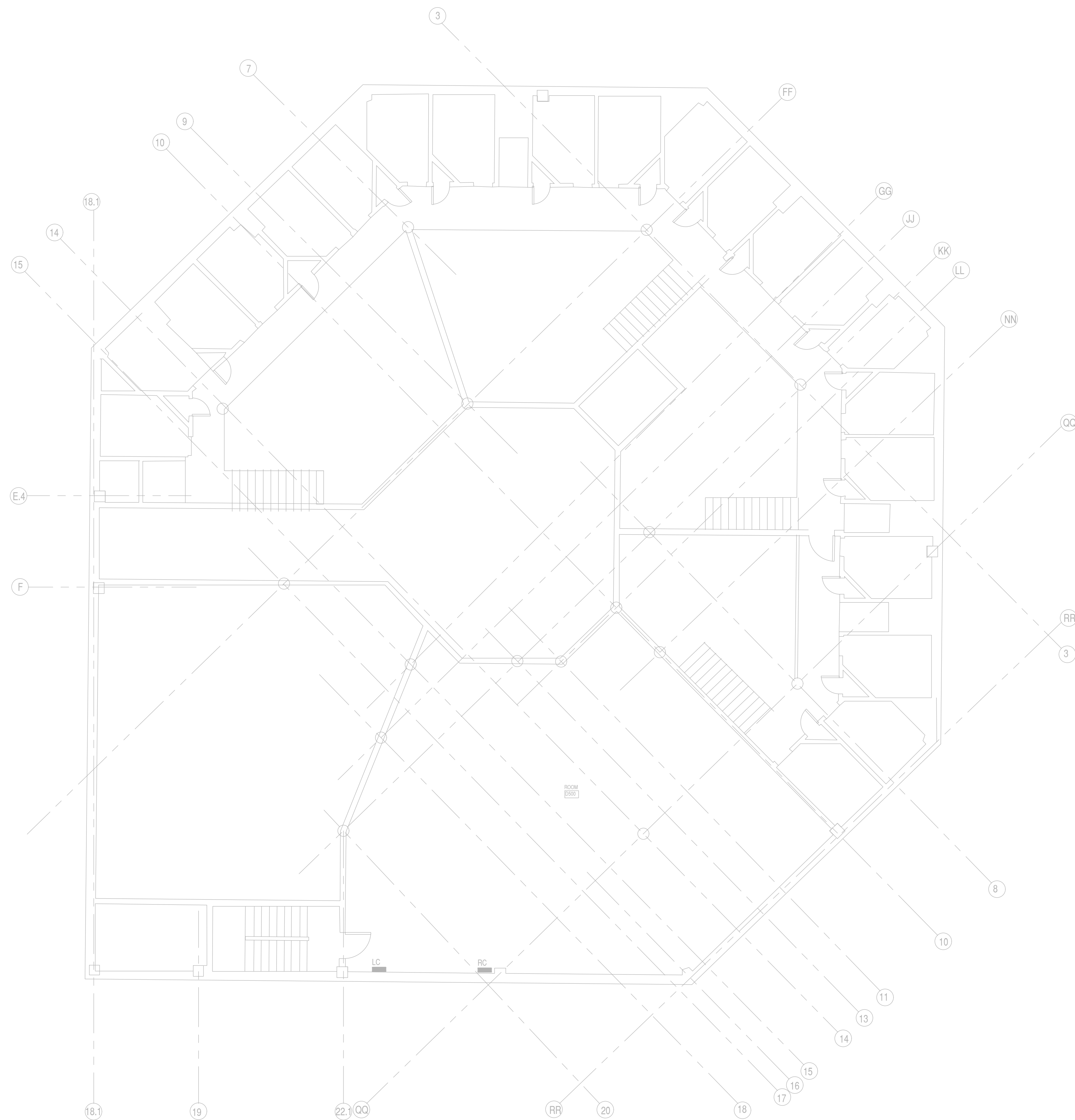
Project Title:  
ST. CROIX COUNTY  
GOVERNMENT CENTER  
ELECTRICAL UPGRADE  
ST. CROIX, WI

Sheet Title:  
FIRST FLOOR  
EXISTING POWER PLAN

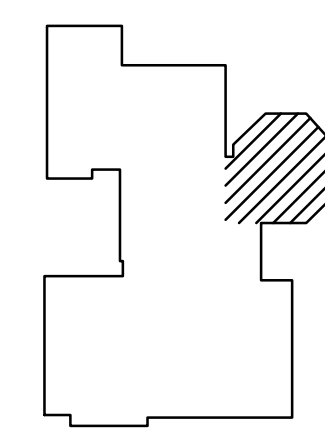
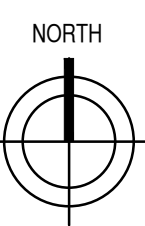
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Checked By:	MES
Project No.:	15-282.00
DWG. Scale:	AS NOTED
Sheet Size:	30x42

Revision Number:  
0  
Sheet Number:  
E-201.1





1 FIRST FLOOR MECHANICAL ROOM - POWER PLAN  
E-201.2 1/8"=1'-0" QMF NO. ISSUE NO. 0 4' 8' 16'



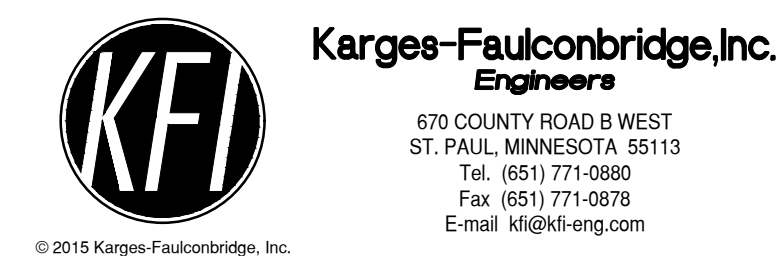
KEYPLAN  
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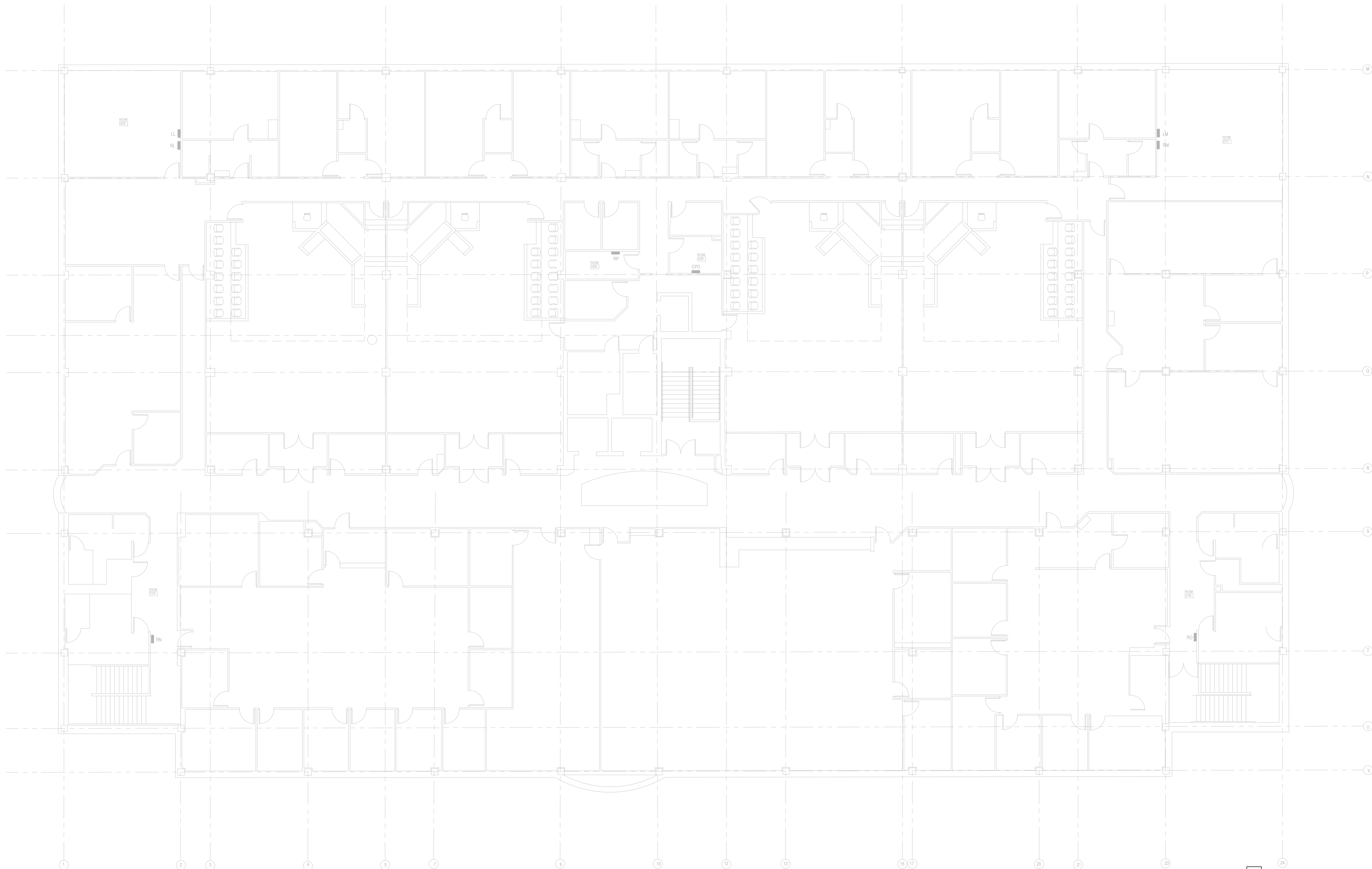
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Project Title: ST. CROIX COUNTY GOVERNMENT CENTER ELECTRICAL UPGRADE ST. CROIX, WI

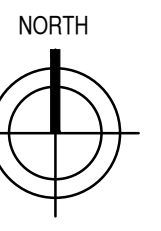
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Date:	03-15-16	Revision Number:	0
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Project No.:	15-282.00		
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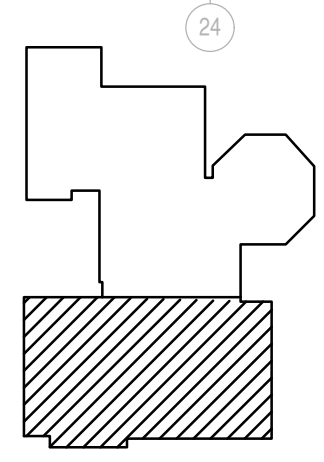


1 SECOND FLOOR - EXISTING POWER PLAN  
E-202 1/8"=1'-0"

QMF NO. ISSUE NO. 0 4' 8' 16'



GENERAL NOTES:  
A. DRAWING SHOWN FOR REFERENCE OF EXISTING ELECTRICAL EQUIPMENT.  
REFER TO E-801 FOR ASSOCIATED WORK.



KEYPLAN  
SHADED SECTIONS INDICATE  
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GOVERNMENT CENTER  
ELECTRICAL UPGRADE  
ST. CROIX, WI

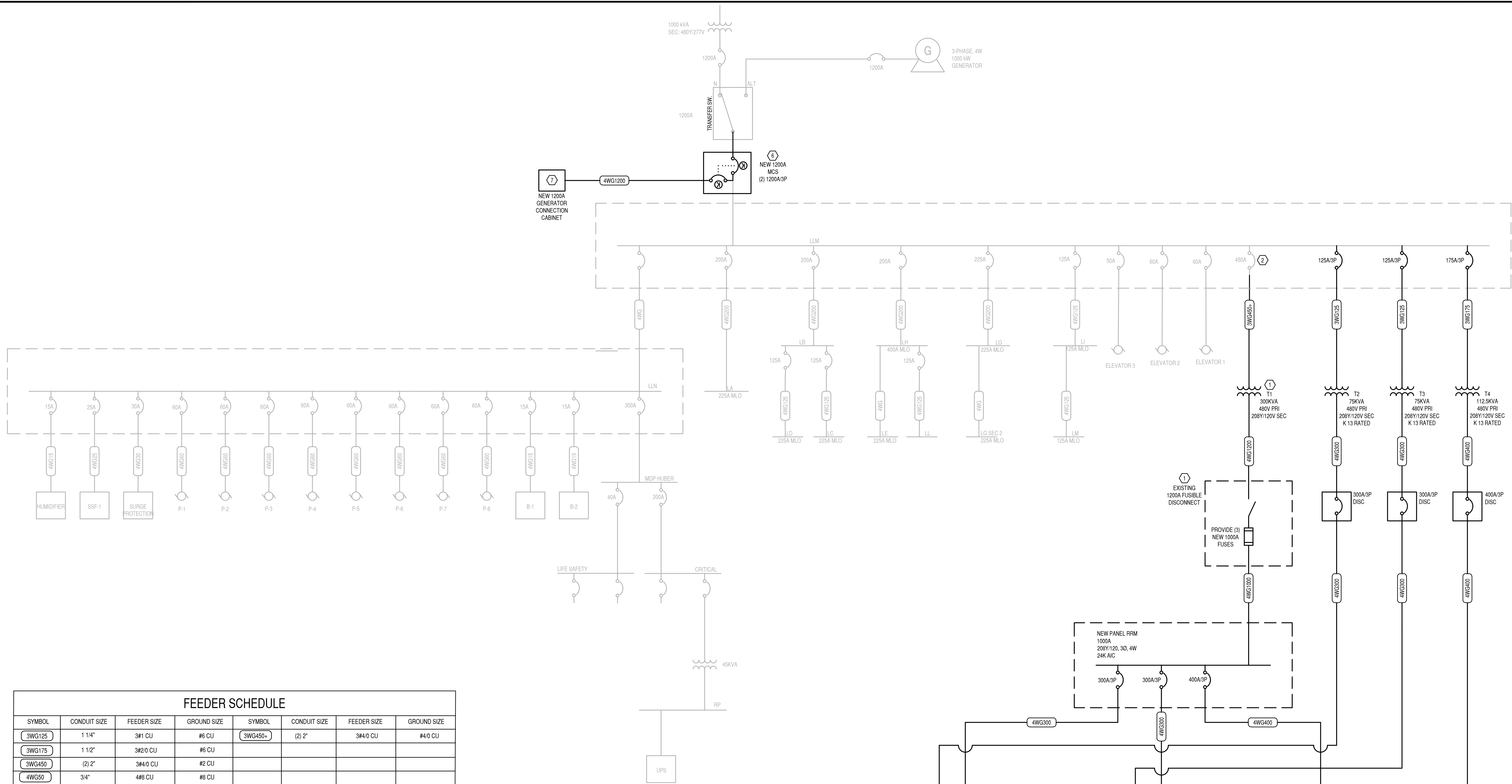
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SECOND FLOOR  
EXISTING POWER PLAN

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Revision Number:  
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Sheet Number:  
E202



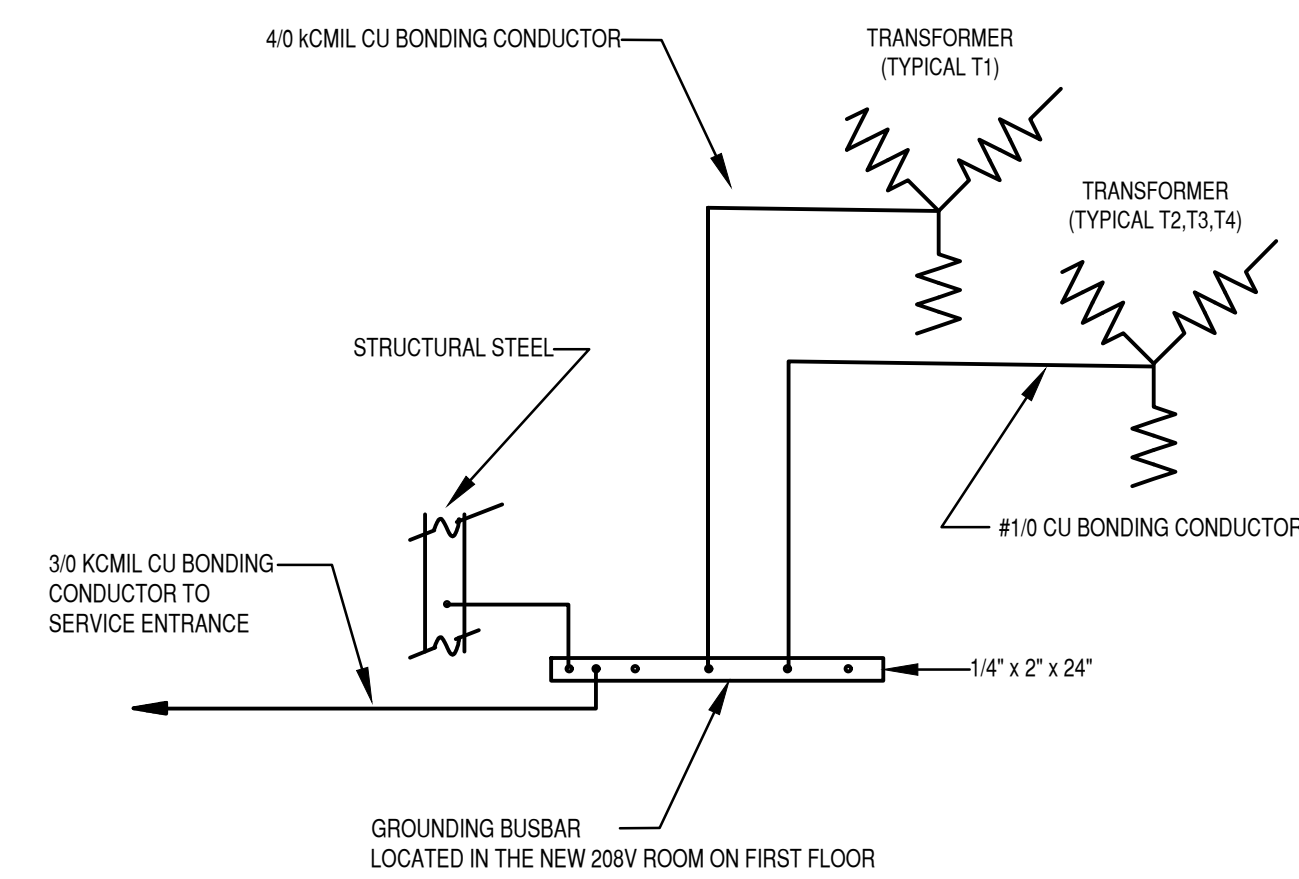




- KEYED NOTES:**
- 1 RELOCATED AND RECONNECTED EQUIPMENT.
  - 2 EXISTING EQUIPMENT.
  - 3 INTERCEPT AND EXTEND FEEDER TO NEW PANEL 911 DISPATCH.
  - 4 INTERCEPT AND EXTEND FEEDER TO NEW PANEL JAIL.
  - 5 INTERCEPT AND EXTEND FEEDER TO NEW PANEL IT FACILITIES.
  - 6 PROVIDE MOLDED CASE SWITCH ARRANGEMENT FOR REMOTE GENERATOR CONNECTING SWITCH SHALL BE RATED FOR NOT LESS THAN 480V, 1200A 3 PHASE 5 WIRE.
  - 7 PROVIDE A LOCKABLE WEATHERPROOF CONNECTION CABINET FOR A MOBILE GENERATOR. THE GENERATOR CONNECTION BOX SHALL BE A CAM-LOCK TYPE WITH A GENERATOR BONDING TERMINAL, AND RATED FOR A MINIMUM OF 480V, 1200A 3 PHASE.

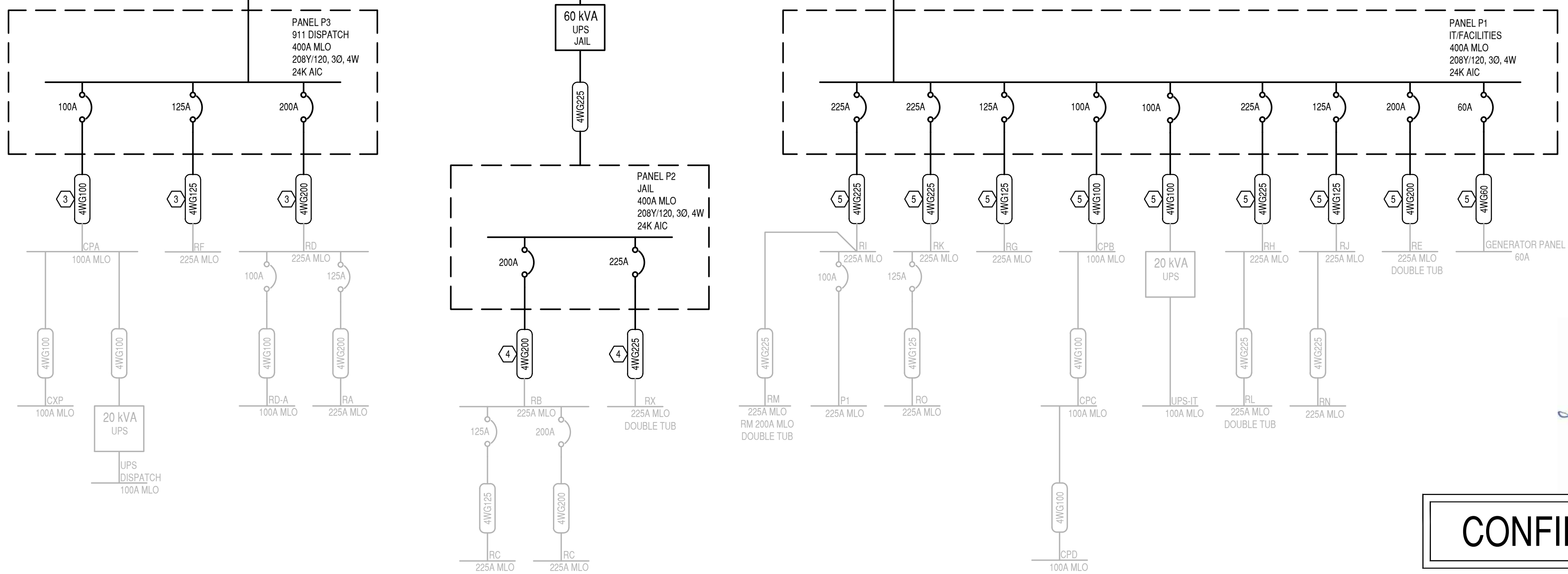
FEEDER SCHEDULE							
SYMBOL	CONDUIT SIZE	FEEDER SIZE	GROUND SIZE	SYMBOL	CONDUIT SIZE	FEEDER SIZE	GROUND SIZE
3WG125	1 1/4"	3#1 CU	#6 CU	3WG450+	(2) 2"	3#4/0 CU	#4/0 CU
3WG175	1 1/2"	3#2/0 CU	#6 CU				
3WG450	(2) 2"	3#4/0 CU	#2 CU				
4WG50	3/4"	4#8 CU	#8 CU				
4WG100	1 1/4"	4#3 CU	#8 CU				
4WG125	1 1/2"	4#1 CU	#6 CU				
4WG175	2"	4#2/0 CU	#6 CU				
4WG200	2"	4#3/0 CU	#4 CU				
4WG225	2 1/2"	4#4/0 CU	#4 CU				
4WG300	2 1/2"	4#350 CU	#4 CU				
4WG400	(2) 2"	4#3/0 CU	#3 CU				
4WG1000	(3) 3"	4#400 CU	#2/0 CU				
4WG1200	(4) 2 1/2"	4#350 CU	#3/0 CU				

2 CONDUIT AND WIRE SCHEDULE  
E-501 NO SCALE



3 PARTIAL GROUNDING DIAGRAM  
E-501 NO SCALE

1 NEW SINGLE LINE  
E-501 NO SCALE



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